

Application No.: 09/681,008
Amendment dated: July 25, 2004
Reply to Office Action of April 26, 2004

This listing of claims will replace all prior versions and listings of claims in this application:

a.) Listing of Claims

1. (Currently Amended) an optical scanning apparatus comprising:

a replaceable specimen receiving device for receiving a carousel insert holding a plurality of specimens in a confocal scanning microscope, the specimen receiving device defining an axis of rotation and being rotatable about the axis of rotation; and

a scanning device provided for optically scanning the plurality specimens, the scanning device defining a further axis and being rotatable about the further axis, the scanning device being arranged movably relative to the specimen receiving device, wherein the scanning device or the specimen receiving device is linearly displaceable, wherein at least one laser beam is provided for scanning the specimens, and wherein the laser beam defines a non-zero incidence angle on the surface of the specimen receiving device, and wherein the non-zero incidence angle is about 10 degrees.

2. (Previously Presented) The apparatus as defined in Claim 1, wherein the scanning device defines a movement in a first radial direction and the specimen receiving device defines a movement in a second radial direction, and the relative movement between scanning device and specimen receiving device resulting from the first radial direction and the second radial direction is linear.

4. (Previously Presented) The apparatus as defined in Claim 1, wherein an optical distance between a specimen and the scanning device remains substantially constant during a relative motion between the scanning device and the specimen receiving device.

5. (Previously Presented) The apparatus as defined in Claim 1, wherein the specimen receiving device defines a rotation speed of the specimen receiving device, and the rotation speed is dependent on the relative position between the specimen receiving device and the scanning device.

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6. (Previously Presented) The apparatus as defined in Claim 5, wherein the rotation speed is dependent on a detected data stream of the scanning device.
8. (Previously Presented) The apparatus as defined in Claim 1, wherein the specimen receiving device receives a single, replaceable specimen vessel.
10. (Previously Presented) The apparatus as defined in Claim 1, wherein the carousel insert receives individual specimen holders.
11. (Previously Presented) The apparatus as defined in Claim 10, wherein the individual specimen holders are positionable in a predefinable plane on the carousel insert with retaining means.
12. (Previously Presented) The apparatus as defined in Claim 10, wherein the individual specimen holders are positioned resiliently.
13. (Previously Presented) The apparatus as defined in Claim 1, wherein an auto focusing means is provided for maintaining the specimens in focus.
14. (Previously Presented) The apparatus as defined in Claim 13, wherein the auto focusing means maintains the surface of the rotating specimen receiving device or of the specimen vessel or of the specimen holders located in the carousel insert always within a deviation of less than 20 μm in the direction of the optical axis of the scanning device.
15. (Previously Presented) The apparatus as defined in Claim 1, wherein at least one laser beam is provided for scanning the specimens and at least one detector detects fluorescent light from the specimen.
16. (Previously Presented) The apparatus as defined in Claim 15, wherein the laser beam scans in at least one direction.
17. (Previously Presented) The apparatus as defined in Claim 15, wherein the laser beam is stationary relative to the scanning device.
18. (Previously Presented) The apparatus as defined in Claim 15, wherein the laser beam provided for scanning can be of different wavelengths.

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19. (Previously Presented) The apparatus as defined in Claim 15, wherein the laser beam has an axial extent of the focus region in the specimen region of less than 40 μm .

20. (Previously Presented) The apparatus as defined in Claims 15, wherein the laser beam has a lateral extent of the focus region in the specimen region in a range between 5 μm and 200 μm .

21. (Cancelled)

22. (Previously Presented) The apparatus as defined in Claim 14, further comprising synchronization markers provided on the specimen receiving device or the specimen vessel or the carousel insert.

23. (New) An optical scanning apparatus comprising:

a replaceable specimen receiving device for receiving a carousel insert holding a plurality of specimens in a confocal scanning microscope, the specimen receiving device defining an axis of rotation and being rotatable about the axis of rotation; and

a scanning device provided for optically scanning the plurality specimens, the scanning device defining a further axis and being rotatable about the further axis, the scanning device being arranged movably relative to the specimen receiving device, wherein the scanning device or the specimen receiving device is linearly displaceable, wherein at least one laser beam is provided for scanning the specimens, and wherein the laser beam defines a non-zero incidence angle on the surface of the specimen receiving device.